

**AMENDMENTS TO THE CLAIMS:**

***This listing of claims will replace all prior versions, and listings, of claims in the application:***

1. (Currently amended) A training method for a power amplifier pre-distorter formed by a FIR filter structure, wherein the FIR filter structure includes an individual look-up table for each filter tap, ~~each look-up table representing a discretized polynomial in a variable representing signal amplitude,~~ the method comprising:

selecting, from each filter tap look-up table, a filter coefficient that depends on ~~the an~~ amplitude of a corresponding complex signal value to be multiplied by the filter tap;

determining a first estimate of a first look-up table assigned to a first filter tap, assuming a second look-up table assigned to a second filter tap is set to predetermined table values; and

determining a second estimate of the second look-up table, assuming the first look-up table is set to the determined first estimate,

wherein each look-up table represents a discretized polynomial in a variable representing the signal amplitude.

2. (Previously presented) The method of claim 1, further comprising refining the first estimate, assuming the second look-up table is set to a latest determined second estimate.

3. (Previously presented) The method of claim 1, further comprising:

(a) refining the first estimate, assuming the second look-up table is set to the latest determined second estimate;

(b) refining the second estimate, assuming the first look-up table is set to a latest determined first estimate.

4. (Previously presented) The method of claim 3, wherein the steps (a) and (b) are repeated until the first and second estimates have converged.

5. (Previously presented) The method of claim 2, wherein the steps of determining the first estimate, determining the second estimate, and refining the first estimate involve solving equations having a same algebraic form.

6. (Previously presented) A base station including a power amplifier pre-distorter formed by a FIR filter structure including:

an individual look-up table for each filter tap, each look-up table representing a discretized polynomial in a variable representing signal amplitude; and

means for selecting, from each filter tap look-up table, a filter coefficient that depends on the amplitude of a corresponding complex signal value to be multiplied by the filter tap,

wherein said base station further includes a pre-distorter trainer  
including:

means for determining a first estimate of a first look-up table assigned to  
a first filter tap, assuming a second look-up table assigned to a second filter  
tap is set to predetermined table values; and

means for determining a second estimate of the second look-up table,  
assuming the first look-up table is set to the determined first estimate.

7. (Previously presented) The base station of claim 6, wherein said  
trainer includes means for refining the first estimate, assuming the second  
look-up table is set to a latest determined second estimate.

8. (Previously presented) The base station of claim 6, wherein said  
trainer includes:

means for refining the first estimate, assuming the second look-up table  
is set to the latest determined second estimate;

means for refining the second estimate, assuming the first look-up table  
is set to the latest determined first estimate.

9. (Previously presented) The base station of claim 8, wherein said  
means for refining the first estimate and said means for refining the second

estimate repeat their respective refining until the first and second estimates have converged.

10. (Previously presented) The method of claim 3, wherein the steps of determining the first estimate, determining the second estimate, refining the first estimate, and refining the second estimate involve solving equations having a same algebraic form.

11. (Previously presented) The method of claim 4, wherein the steps of determining the first estimate, determining the second estimate, refining the first estimate, and refining the second estimate involve solving equations having a same algebraic form.

12. (Previously presented) The base station of claim 7, wherein said means for determining the first estimate, said means for determining the second estimate, and said means for refining the first estimate all use solving equations having a same algebraic form.

13. (Previously presented) The base station of claim 8, wherein said means for determining the first estimate, said means for determining the second estimate, said means for refining the first estimate, and said means for

refining the second estimate use solving equations having a same algebraic form.

14. (Previously presented) The base station of claim 9, wherein said means for determining the first estimate, said means for determining the second estimate, said means for refining the first estimate, and said means for refining the second estimate use solving equations having a same algebraic form.